

= EP-A-0,773,246

(21)

<p>97-261290/24 A25 B07 D21 F06 (A26 A96 A97 D18 F09) BADI 95.11.08 *EP 773246-A1</p> <p>BASF AG 95.11.08 95DE-1041658 (97.05.14) C08G 18/12, A61K 7/06, C08G 18/66</p> <p>Water-soluble or -dispersible graft polymer from polyurethane and protein - used in cosmetics, especially compositions for strengthening hair, and in coatings for pharmaceuticals, paper, textiles and leather (Ger)</p> <p>C97-084602 R(BE CH DE ES FR GB IT LI NL)</p> <p>Addnl. Data: NGUYEN K, SANNER A, HOESSEL P 96.11.04 96EP-117641</p>	<p>A(5-G1B, 10-E, 12-B2, 12-B2A, 12-B3A, 12-V1, 12-V4) B(4-C3, 4-N2, 14-R2) D(7-A, 8-B5) F(3-E1, 5-A6B) .3</p> <p>USE</p> <p>The graft polymers are used in cosmetics, especially for hair cosmetics, particularly for fixing hair; or as redispersible coating compositions for processing pharmaceuticals, paper, textiles, or leather (all claimed).</p> <p>ADVANTAGE</p> <p>The compositions are more easily washed out of hair, are biodegradable, and have low (below 60%) content of volatile organic compounds (VOC).</p> <p>PREFERRED POLYMER</p> <p>(1) is produced from (a) a compound with at least 2 active H atoms, (b) a compound with at least 2 active H atoms and at least 1 acid, tertiary amine or ionogenic or ionic group, and (c) a diisocyanate. The equivalent ratio(NCO):(active H) =>1:1 to 1.2:1.</p> <p>(b) is preferably a carboxylate and/or sulphonate group or a group containing nitrogen, especially dimethylolpropanoic acid.</p> <p>(a) contains a polyester diol (a1) and/or a silicone of formula (a2)</p> <p>EP 773246-A+</p>
<p>Water-soluble or -dispersible graft polymers (I) and their salts are claimed. The polymers are from a water-soluble or -dispersible polyurethane prepolymer (A) with terminal NCO groups, and a protein (B) with free amino groups.</p> <p>Also claimed are</p> <p>(1) a process for preparing (I) by reacting (A) with (B); and</p> <p>(2) a hair-treatment agent containing (I), especially in the form of a hair spray.</p>	

<p>in weight ratio (a1):(a)+(b) = at least 30 (preferably 40-90):100 and (a2):(a)+(b) up to 50:100.</p> $X-(CH_2)_m-(SiR_1R_2-O)_n-SiR_1R_2-(CH_2)_m-X \quad (a2)$ <p>R₁, R₂ = 1-4C alkyl, benzyl or Ph; X = OH or NH₂; m = 2-10; n = 3-50.</p> <p>(B) is casein or a hydrolysate product from casein.</p> <p>PREFERRED PROCESS</p> <p>The polyurethane prepolymer and the protein are reacted in an aqueous or aqueous-alcoholic solution. The protein solution contains a tertiary amine.</p> <p>PREFERRED AGENT</p> <p>The hair-treatment agent contains 0.2-20 wt.% (I) and 0.1-10% of a known hair-setting polymer.</p> <p>EXAMPLE</p> <p>A solution was prepared by heating 0.5 Mol polyester diol (Mw</p>	<p>1000) (prepared from isophthalic acid, adipic acid and hexane diol), 0.05 Mol polyethylene glycol (Mw 1500) and 1.25 Mol dimethylolpropanoic acid in methyl ethyl ketone (MEK) at 80 ° C. The solution was cooled immediately to 50 ° C and 1.9 Mol of isophorone diisocyanate was added dropwise, and stirring at 90 ° C until the NCO content of the mixture remained constant. After cooling to room temperature, (116.5 g of casein (as a 15% aqueous casein-triethanolamine solution (12:1 by wt.)) was added dropwise, followed by stirring until no NCO groups could be detected. After neutralisation with 2-amino-2-methylpropanol, MEK was distilled off at 40 ° C in a vacuum, giving an aqueous dispersion of a graft polymer which could be sprayed dried.</p> <p>A hand pump spray composition with 55 wt.% VOC contained 5 wt. of the graft polymer, 40% of water, 55% of ethanol, and perfume and surfactant. The composition was sprayed on hair. The film which formed was easily redispersible in water/ethanol (1:1). The curl retention on hair was 65% and the flexing strength of treated hair strands was 356 cN. (LJ)</p> <p>(14pp510DwgNo.0/0)</p> <p>SR:DE2144878 DE3831169 EP619111 FR2152240 GB2086395</p> <p>EP 773246-A</p>
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M / : 32/ew

H. Fickentscher, Cellulose Chemie 13 (1932) 58-64, 71, 74

ABS: A system for the characterization of cellulose and cellulose derivatives based on their respective viscosity in solution is described.